

ABUSE-DETERRENT PHARMACEUTICAL COMPOSITIONS OF OPIOIDS AND OTHER DRUGS

Abstract

An abuse-deterrent pharmaceutical composition has been developed to reduce the likelihood of improper administration of drugs, especially drugs such as opioids. In the preferred embodiment, a drug is modified to increase its lipophilicity. In preferred embodiments the modified drug is homogeneously dispersed within microparticles composed of a material that is either slowly soluble or not soluble in water. In some embodiments the drug containing microparticles or drug particles are coated with one or more coating layers, where at least one coating is water insoluble and preferably organic solvent insoluble, but enzymatically degradable by enzymes present in the human gastrointestinal tract. The abuse-deterrent composition retards the release of drug, even if the physical integrity of the formulation is compromised (for example, by chopping with a blade or crushing) and the resulting material is placed in water, snorted, or swallowed. However, when administered as directed, the drug is slowly released from the composition as the composition is broken down or dissolved gradually within the GI tract by a combination of enzymatic degradation, surfactant action of bile acids, and mechanical erosion.